SALT IS WASTED OUT IN OKLAHOMA

Springs and Streams Run Brine in that State.

AT BASE OF GYPSUM HILLS

Director of Geological Survey Describes Saline Resources of the New Commonwealth—Properly Developed, It Would Be Source of Riches—Big Salt Plains.

Guthrie, Okla., July 3.—Wells and springs containing salt water are found throughout the Redbeds area in Western Oklahoma, and in the eastern part of the State and in certain regions the water from the springs is so salty as to warrant the popular phrase "salt springs" or "salt plains."

There are two salt plains along the Cimarron River, between Woods, Woodward, and Harper counties; two in Northwestern Greer County, and one each in Alfalfa, Blaine, and Beckham counties. These plains are widely separated and vary greatly both in size and amount of water which flows from them. While all the salt springs come from the rocks of the Redbeds, they do not all issue from the same geological horizon. The Alfalfa County plain is located thirty miles or more from the Gypsum Hills, but all the other plains are in these hills. The Cimarron River plains and Blaine County plain are supplied by springs that issue not far below heavy gypsum members and the Bickham and Greer counties plains are found near the base of gypsum ledges.

Alfalfa County Plain.

This is the largest of the Oklahoma salt plains and the only one that contains no large salt springs. It is four miles east of Cherokee, south of the Salt Fork of the Arkansas in the eastern part of Alfalfa County, and is about thirty miles from the nearest point of the Gypsum Hills. It includes an area of approximately sixty square miles, extending about ten miles north and south and six to eight miles east and west. The plain is as level as a floor and on ordinary occasions as white as a snow field from the incrustation of salt crystals which cover it. It is barren of vegetation, with only here and there a scattered bit of driftwood to break the monotony.

Origin Is Obscure.

The origin of the salt on this plain is somewhat obscure. About the margin of the plain are a few weak salt springs, but they rarely furnish sufficient water to form a running stream. On digging a hole a few feet deep in any part of the plains salt water begins to run in and in ten minutes the hole will fill up to a point within six inches of the top. The plain is composed of loose reddish-brown sand and clay, which is apparently everywhere saturated with salt water.

The surface evaporation of this water gives rise to the white salt incrustations which render the surface of the plain white, except after a rain, when the salt crystals are dissolved.

The best explanation of the origin of the salt water is to suppose that it comes from a large number of small springs which issue from the Redbeds beneath the plain.

There is a theory in the community that the plain is underlaid with rock salt. There is no evidence to support this theory, however, and it seems more reasonable to suppose that the shale beneath the plain is impregnated with salt and that water penetrating this shale dissolves the salt. There is no way of estimating the amount from these plains, but there is doubtless enough to supply a hundred salt plants. None of it is being utilized.

Cimarron River Plains.

Along the Cimarron River between Woods, Woodward, and Harper counties are two salt plairs, fed by springs which issue from red shales 50 to 100 feet below a heavy ledge of gypsum. Locally these plains are known as Big Salt Plain and Little Salt Plain, the latter being just south of the Kansas line, where the Cimarron River first breaks through the line of Gypsum Hills. The Little Salt Plain is two to three miles long and a mile or more wide.

The Big Salt Plain is fifteen or twenty miles farther down the Cimarron, extending eight miles or more along the river. In width it varies from half a mile to two miles. On the south bank the bluffs of red shale and sandstone, capped with gypsum, rise directly from the edge of the plain to a height of 100 feet or more. North of the plain these hills are not so steep and are at a distance of half a mile or more from the plain, but even here the sinuous white line of gypsum may be traced along the tops of the bluffs as far as the eye can reach. In other words, the plain lies in a broad canyon of the Cimarron River, inclosed on both sides by gypsum-capped hills.

Plain Flat and Dry.

The plain is flat, except for a few meandering channels of the Cimarron River, which in wet weather contain small streams of water, but ordinarily dry. After a rain sometimes a stream of considerable volume flows down the channel across the plain, but during the summer months nearly all the water either evaporates or sinks into the sand. In places where a small stream still runs down the channel the water is often so salty that a thin crust of crystal-white salt, resembling a sheet of ice, forms on the surface of the stream. The entire plain, except just after a rain, is covered with a thin incrustation of snow-white crystals, which in most places do not exceed an eighth of an inch in thickness, but reflect the sunlight like a snow field.

In a large cove among the gypsum-covered hills at the mouth of Buffalo Creek, near the south side of the plain proper, there are a number of salt springs which boil up from the flat surface of the plain. The water is crystal-clear, and it sometimes requires more than ocular proof to convince one that it contains nearly 40 per cent of salt. There are scores, perhaps hundreds, of these springs on an area of a few acres, some of which flow streams as large as a man's arm.

Salt Crystals Mark Springs.

The presence of a spring is always marked by a conspicuous white incrustation of salt, which forms around the spring and along the sides of the little stream that flows from it. Particles of grass or weeds blown into these springs or streams soon become covered with white salt crystals, thus forming strings which are often an inch or more in diameter and look like rock candy. In places the incrustations around the springs are so thick that the salt may be scraped up and hauled away. In former years freighters came for hundreds of miles to haul this salt away for stock and for domestic use.

Beds of rock salt are reported from this plain, but their presence has never been verified. The combined flow of the various springs which feed the plain will approximate several thousand gallons an hour. In former years there have been a number of primitive salt plants in this region. The water was dipped or pumped up from the springs or from shallow wells and evaporated in pans or kettles, sometimes by sun heat, sometimes by fire. At the present time no salt is being made.

Besides the two plains of the Cimarron, the Salt Creek plain, in Northern Blaine County, is also fed by springs which issue from below the gypsum ledges, and, like others, it is located in a canyon at the foot of the Gypsum Hills. This plain is much smaller than the Big Salt plain of the Cimarron. It is not more than a quarter of a mile wide at the widest place, and for the greater part of its extension is not more than 100 yards, with a length of perhaps three miles. The springs which supply the plains issue from the head of the main Salt Creek canyon. A ledge of red and blue mottled, cross-bedded sandstone outcrops along the heads of several branches of the main canyon, and springs issue from it. The flow is sufficient to form a small creek. Along the bottom of the canyon the salt incrustations, formed by evaporation, cover a narrow strip 100 yards wide along the sandy channel of the stream. A mile below the springs the canyon widens, the creek leaves the wall of hills and enters the flat country, and the salt plain spreads out and becomes, in one place, as much as a quarter of a mile wide.

Best of Salt Plains.

From the standpoint of economic importance the Salt Creek plain bids fair to exceed all others in the State, as it is nearer both to the coal fields and to market than the others. A number of primitive salt plants have at different times been located along the edge of the plain. The methods employed in securing the salt are extremely simple. A well is dug in the sand of the plain and the water pumped by hand into vats and evaporated by boiling. Fuel, chiefly cedar and oak wood, was formerly obtained from the canyons near by. It is stated that three buckets of brine will make one bucket of salt. The capacity of one of these plants is said to have been from 500 to 2,000 pounds a day. The salt is hauled in wagons to supply local trade, and the demand is said to have exceeded the supply for a number of years.

A few years ago a plant with a capacity of 450 barrels a day was erected at Ferguson, Okla., the nearest railroad point to the plain. The brine was obtained from open and drilled wells and was carried two miiees in a two and a half-inch wrought iron pipe. Steam was employed to operate the rakes, elevators, and conveyors. The pans were of cement, 12 by 150 feet and 20 inches deep. The plant remained in operation but a few months.

Beckham County Plain.

In the extreme southern part of Beckham County, near Carter, is a salt plain occupying an area of about forty acres. This plain, which is about half a mile distant from the North Fork of Red River, is located near the base of the Gypsum Hills. In places springs of salt water issue directly from beneath gypsum ledges, while in other instances the water boils up in the form of bold springs from the level surface of the plain. There are more than twenty springs, the waters of which unite to form a stream as large as a stovepipe. In view of the fact that a great part of the water sinks into the sand it is probable that this amount represents but a small part of the actual flow.

Salt has been manufactured at this plain for many years. The water is said to contain a considerable proportion of gypsum, but not so much as to render it unfit for use.

Greer County Plains.

The two Greer County salt plains are in small canyons which have been carved in Gypsum Hills south of Elm Fork of Red River, about five miles east of the Texas line. From the names of the owners these plants are locally known as the Chaney Salt Plain and the Kiser Salt Plain. Neither covers an area of more than an acre and they are not more than a mile apart. Both are fed by springs that issue from the shales below heavy ledges of gypsum.

Springs boil up from the level sand floor, and the water flows out of the canyon to mingle with the water of the river. A flourishing local industry has been carried on at these plains for twenty years, and some years as much as 600,000 pounds of salt have been manufactured at each. Since the timber which formerly grew in the canyons has been exhausted solar evaporation has been largely employed to produce salt. The average combined flow from each plain forms a stream larger than a man's arm. In a number of canyons emptying into Elm Fork in this region there are salt springs, but no others have sufficient strength of flow to warrant the establishment of salt plants.

Little Salt Manufactured.

Very little salt is now being manufactured in Oklahoma. On the Greer County salt plains a few thousand pounds of salt is made each year by solar evaporation. The salt brine is led out into earthen reservoirs and allowed to remain till it is evaporated.

On the Blaine County salt plain and the one on the Cimarron River salt is sometimes made in a small way. Wells are dug into the plain and the water allowed to accumulate. It is then pumped into vats and evaporated by boiling.

There is no way of estimating accurately the amount of salt water going to waste in Oklahoma, but there is certainly enough to make 100 carloads of salt a day.

The people of Oklahoma bring salt from Kansas, Louisiana, and Michigan, and pay not only the market price for the salt, but an exorbitant freight rate as well, when there is an inexhaustible supply going to waste at home. These conditions cannot continue. Some day the brine which is now running away, contaminating the streams, will be utilized.

CHARLES N. GOULD,
Director Oklahoma Geological Survey.

FACTS ABOUT SOUTHERN PROGRESS, 1860 TO 1908.

Data is derived from reports of the Census, Bureau of Education, Statistical Abstract, and other official sources, and includes Missouri and Oklahoma.

POPULATION.

1860	10,259,016
1870	11,250,411
1880	15,257,293
1900	22,081,639
1906	24,352,278

SCHOOL CHILDREN.

1863	no data
1879	788,114
1880	2,297,226
1890	3,801,039
1900	4,795,835
1907	5,212,126

COST OF SCHOOLS.

1860	no data
1870	no data
1880	$7,133,000
1890	16,253,582
1900	22,656,196
1907	35,810,393

RAILWAY MILEAGE.

1860	9,535
1870	12,554
1880	19,572
1890	41,557
1900	51,217
1907	63,784

VALUE OF FARM PRODUCTS.

1860	no data
1870	$720,714,000
1880	630,777,730
1890	739,000,000
1900	1,226,961,000.

FARM IMPLEMENTS.

1860	$90,446,009
1870	55,831,280
1880	70,071,169
1890	85,898,790
1900	158,600,840
1904	184,923,165

COTTON CROP.

	Bales.
1860	5,344,166
1870	3,010,113
1880	5,718,041
1890	7,437,971
1900	9,868,417
1906	12,354,727
1908	12,660,461

TOBACCO CROP.

	Pounds.
1860	311,768,333
1870	178,418,917
1880	312,167,059
1890	348,107,607
1900	640,906,846
1907	487,970,000
1908	537,048,085

IRISH POTATO CROP.

	Bushels.
1860	8,403,612
1870	7,967,108
1880	9,826,922
1890	16,758,220
1900	18,456,614
1907	22,544,000
1908	25,446,000

HAY CROP.

	Tons.
1860	1,243,040
1870	903,302
1880	1,148,397
1890	3,639,000
1900	3,421,343
1907	4,170,000
1908	5,011,000

CORN CROP.

	Bushels.
1860	346,670,411
1870	343,613,000
1880	354,893,608
1890	427,886,649
1900	461,422,000
1907	693,584,000
1908	762,105,000

WHEAT CROPS.

	Bushels.
1860	38,836,635
1870	30,096,757
1880	43,626,328
1890	42,067,958
1900	78,171,000
1907	44,722,000
1908	54,181,000

MANUFACTURED PRODUCTS.

1860	$193,462,521
1870	277,721,000
1890	328,791,898
1890	706,400,000
1900	1,012,100,000
1905	1,526,400,000

COTTON MANUFACTURES.

1860	$8,469,337
1870	11,372,000
1890	16,356,598
1890	41,513,711
1900	95,002,000
1905	163,268,000

COTTON SPINDLES.

	Number.
1860	324,000
1870	328,000
1880	561,000
1890	1,570,000
1900	4,368,000
1907	9,528,000
1908	10,201,000

COTTON CONSUMED.

	Bales.
1860	186,000
1870	80,000
1880	221,000
1890	545,000
1900	1,597,000
1907	2,455,000

PIG IRON PRODUCED.

	Tons of 2,240 lbs.
1860	no data
1870	130,336
1880	259,880
1890	1,596,341
1900	2,314,598
1907	3,633,388
1908	2,143,259

COAL PRODUCTION.

	Short tons.
1860	936,720
1870	995,681
1880	3,508,086
1890	17,963,082
1900	45,023,371
1907	89,297,207

PETROLEUM PRODUCED.

	Barrels.
1860	no data
1870	no data
1880	179,000
1890	499,000
1909	17,093,973
1907	27,239,000

NATIONAL BANKS.

	Number.
1860	no data
1870	85
1880	177
1890	496
1900	568
1907	1,283
1908	1,377

BANK DEPOSITS.

1860	no data
1870	$18,944,482
1880	41,948,369
1890	125,213,434
1900	261,605,000
1907	485,417,477
1908	434,489,528

VALUE OF IMPORTS.

1860	$30,790,233
1870	22,775,000
1880	15,934,391
1890	29,289,895
1900	33,298,000
1908	76,807,864

VALUE OF EXPORTS.

1860	$261,508,638
1870	194,320,000
1880	183,632,148
1890	227,759,055
1900	369,114,000
1908	558,110,210

VALUE OF COMMERCE.

1860	$322,298,871
1870	227,095,000
1880	204,566,539
1890	267,048,450
1900	402,412,000
1908	634,918,075

PETROLEUM IN 1908

Product 179,572,479 Barrels, Worth $129,706,258.

OKLAHOMA LEADS ALL STATES

New Commonwealth Sends 45,798,765 Barrels to Market and Increases Output 5.23 Per Cent Over Previous Year—Louisiana, Missouri, and West Virginia Show Gains.

On February 3, the Geological Survey published a statement showing the general progress in petroleum production during 1908, according to which the phenomenal production of 1907 had been eclipsed in 1908 by a production of between 175,000,000 and 180,000,000 barrels.

The Survey is now compiling the final figures for 1908, which will show that the total production aggregated 179,572,479 barrels, vauled at $129,706,258, an increase in quantity of 8.11 per cent over 1907.

Oklahoma led all the States in production, with a total of 45,798,765 barrels, an increase of 5.23 per cent over 1907; California was a close second, with 44,854,737 barrels, an increase of 12.85 per cent over 1907; but Illinois gained the greatest percentage, rising from 24,281,973 barrels in 1907 to 32,685,106 barrels in 1908, a gain of 38.72 per cent.

Western States Show Gains.

Colorado, Louisiana, Michigan, Missouri, Utah, Wyoming, and West Virginia also showed gains in production. The declines were in Indiana, where it was nearly 36 per cent; in Kansas, 25 per cent; Ohio, 11 per cent; Texas, 9 per cent; Pennsylvania, nearly 6 per cent; New York, 4.3 per cent; and Kentucky and Tennessee, 11 per cent.

The average price of petroleum for the entire country in 1908 remained identical with that of 1907, but there were considerable variations of an important character in individual States. The most notable of these was the increase in price in California, from 37 cents a barrel in 1907 to 52¼ cents a barrel in 1908. The Gulf States, Louisiana and Texas, showed a decline in value from a little over 80 cents to 60 cents. The Appalachain oil showed a slight increase in value, from $1.75 in 1907 to $1.79 in 1908. On the whole, prices were remarkably steady considering the notable increase over the large production of 1907.

Increase in Three Fields.

The increased activity in the three great fields—California, Oklahoma, and Illinois—was the dominant feature of the situation rather than the discovery and opening of any considerable new fields. The principal new field to gain prominence was the Caddo pool, in northwestern Louisiana. The hoped-for increase in production from the Markham and Goose Creek fields in Texas did not materialize, and the total from the State showed a decline in spite of the increased production in the Humble pool. In the Appalachain field 7,115 new wells were drilled, of which 5,292 were producers, with a total initial production of 55,002 barrels; in the Lima-Indiana region 1,250 new wells were drilled, of which 1,088 were producers; in the new Illinois field 3,574 wells were drilled, of which 3,019 were producers, with an average initial production of twenty-six barrels a well. In the Mid-Continent field 3,490 wells were drilled, of which 2,587 were producers of oil, 471 were producers of gas, and 432 were dry; the initial production of the producing wells averaged 83.7 barrels. In the Gulf field only 819 new wells were drilled, 606 being producers and showing an initial production of 297 barrels. In California 617 wells were drilled, of which 594 were productive, and in other parts of the country forty-four wells were drilled, yielding twenty-four new producers. From the total of 15,210 productive wells drilled, the initial production was 42.9 barrels.

COTTON MEN CONFER.

Seventy-five Delegates Attend Meeting at Monte Ne, Ark.

Monte Ne, Ark., July 3.—Seventy-five delegates, representing many cotton growing States, were present at the third annual meeting of the National Cotton Association. Arkansas and Oklahoma have the largest representations. The convention, which will remain in session several days, will discuss ways and means of marketing cotton to the best probable advantage. John D. Walker, of Georgia, is chairman of the meeting.

The attendance was increased by the arrival of the delegates from Florida and Georgia. Every cotton growing State is now represented in the convention.

The convention met in the banquet hall of the Oklahoma Building and W. P. Weld, of Marianna, Ark., was elected temporary chairman. After the delegates had been extended a welcome by W. H. Harvey on behalf of Monte Ne, and responses had been made by speakers from several States, the convention listened to reports from various sections of the country on the condition of the cotton crop.

The important question of jute product will be taken up. Resolutions have been prepared on the matter to be laid before the convention. The delegates were entertained at the Vinola wine ranch, one mile from Monte Ne.

MARKET PLACE IS READY.

Oklahoma Town Takes on Visible Proof of Settled Civilization.

McAlester, Okla., July 3.—The farmers' market that has been in the course of construction for the last week is completed and ready for occupancy. It is situated on the vacant lot north of Crowl's warehouse at the corner of Cherokee avenue and Second street. The location is a favorable one, as it is just one block from the public drinking fountain on Chickasaw avenue and one and a half blocks from Choctaw avenue.

It reminds me of a wagon yard, being surrounded by an iron bar to which horses and mules may be tied. A large barn has been constructed on the northeast corner to shelter stock during the inclement weather. Chicken coops and hog pens have been built for the convience of the farmers.

Farmers who come into the city to sell produce may leave their wagons and teams here at any time free of cost. It should be a great inducement to farmers to bring their products here.

THREE STATES YIELD SALT

Louisiana Produced 947,129 Barrels in Year 1909.

Texas Output Last Year Valued at $255,000 and West Virginia's at $70,481.

Elsewhere in this section appears an article upon the salt resources of Oklahoma, from the pen of the director of the geological survey of that State. His story shows that salt chiefly runs to waste in that favored locality waiting capital to develop the manifestly rich springs and deposits of salt there.

In three other Southern States salt is manufacture in considerable quantities. These States are Louisiana, Texas, and West Virginia. From advance sheets on the chapter on "Mineral Resources of the United States" appear the following facts regarding salt production in the States named:

The salt mined in Louisiana comes from Weeks and Avery islands, in Iberia Parish. The production in 1908 amounted to 947,129 barrels, valued at $249,733, as compared with 1,157,621 barrels, valued at $226,892, in 1907. The output fell off by 210,492 barrels, but the value was $22,841 greater than in 1907. Louisiana still ranks fifth among the States in the quantity of salt produced, but seventh in the value of the output, being exceeded in this respect by Texas, California, Ohio, Kansas, New York, and Michigan.

Of the producing localities, Weeks Island, so called, is located on the east shore of Weeks Bay, an eastern lobe of Vermilion Bay. It is sometimes called Grande Cote, on account of its size, though it is scarcely two miles in diameter. Prospecting for salt began here in 1897, and in 1899 the Myles Salt Company, which works the deposits at present, was organized. After considerable prospecting with the drill, the location of a shaft was determined on in 1898, and in March, 1902, the 600-foot level was reached, and tunnels to the east and west were driven. The extreme depth of the shaft is now 645 feet.

The quantity of salt produced in Texas in 1908 was 442,571 barrels, equivalent to 61,960 tons of 2,000 pounds each, valued at $255,652. In 1907 the corresponding figures were 356,096 barrels, or 49,852 short tons, valued at $226,540. Texas was one of the few States whose output and value of salt both increased in 1908, the increase amounting to 86,485 barrels, or 12,108 tons, in quantity and $29,112 in value.

Salt occurs in lagoons along the Gulf coast of Texas and in many salines or lakes throughout the State, from which it is taken annually. The regions of greatest importance are Van Zandt and Anderson counties, in the northwestern part of the State, and Crane and Mitchell counties, in the western part.

The salt is obtained from brine by solar evaporation, chiefly in the neighborhood of Great Salt Lake, Salt Lake County. The brine is also produced at Nephi City, Juab County. Other salt-producing localities are near Gunnison, Sanpete County, in Sevier County, in Millard County, and at Withee Junction, Weber County. An enormous deposit of pure salt is reported to have been found on the west side of the Utah desert, not far from the Nevada State line.

Although salt is produced in Virginia, it is not marketed as such, but is worked up into chemicals by the Marhieson Alkali Works, located at Saltville. Since this is the only company producing salt in this State, the statistics of production are combined with those of other States.

The output from West Virginia in 1908 amounted to 145,157 barrels, valued at $70,481, as compared with 158,147 barrels, valued at $76,527, in 1907. The salt was reported from Mason City and Hartford, Mason County.

Will Extract Turpentine.

Montgomery, Ala., July 3.—Announcement is made of the beginning of construction work here of a large wood distillation plant for the extraction of turpentine from pine stump and sap pine wood. The enterprise is fathered by the Yar Yan Naval Stores Company, composed of local and outside capital. The plant will employ a large force, and the clearing of stumpage from the cut-over land of South Mississippi will increase the vast acreage of fertile soil for the rapidly growing agricultural interest of this section.

USES OF ALUMINUM

This Malleable Metal Enters Many Industries.

IT RETAINS A HIGH POLISH

Wall Covering, Ceiling Panels, Hammered Plates and Numberless Articles for Kitchen Among Most Frequent Uses—Electricians and Automobile Makers Consume It.

A recent event of importance in the aluminum industry was the expiration of the Bradley patent.

As is well known, the business in the United States is in the hands of a single company—the Aluminum Company of America—which controls extensive works at Niagara Falls and Massena, N. Y.; Shawenegan Falls, Quebec, Canada, and at East St. Louis, Ill.

The new plant of the company, built recently at Niagara Falls, is known as No. 3. This is one of the largest plants of its kind in the world. It is furnished with power from the power-house of the Niagara Falls Hydraulic Power and Manufacturing Company through ten generators, each of 5,000 horsepower capacity, which are the largest direct current generators in point of capacity that have ever been built.

The current is carried to the company's reduction plant and rolling mill by means of conductors consisting of aluminum bus-bars, one of the heaviest bus-bar lines in the world.

Most Malleable of Metals.

Aluminum is one of the most malleable of metals. Moreover, it takes and retains a high polish. For these reasons it is used in connection with the manufacture of articles of everyday use almost without limit. Some of these new uses are as wall "paper," ceiling panels, stamped or hammered trays, and finger plates, in the form of thin sheets; as a substitute for lithographic stones and zinc plates, and in the panels of car and carriage bodies. The advantages of aluminum in the manufacture of cooking utensils is well known. Among these advantages are long life, noncorrosion from acids, and lightness.

In the form of powder aluminum is used to an increased extent in the manufacture of metallic paints and varnishes, its property of not tarnishing making it particularly suitable for this purpose. The paint is valuable in protecting iron and in rendering woodword party fireproof when applied in thick coats.

In the form of tubes it is used by acid and rubber manufacturers. A new product is bimetallic tubing, which is made of aluminum and steel, with the outer shell of aluminum and the inner of steel, or vice versa. The same combination may be made with aluminum and copper.

Used to Transmit Electricity.

In America it is used to an increased extent in the transmission of electric power on a large scale. The Aluminum Company of America secured during 1908 the important contract for furnishing the transmission wires to be used in the electrification of the Southern Pacific Railroad Company's terminals in San Francisco. Copper is here replaced by aluminum. Another contract reported as having been received by the same company is that for the cable for a trolley road to Lake Winona, Wis.

Aluminum is used in iron and steel works for removing oxygen from the oxides of iron and other substances, the heat generated being so great as to raise the temperature of large bodies of iron. It also has the power of combining chemically with those gases imprisoned during the cooling of the metal, thus preventing porosity. For these purposes the metal is either used in the form of an alloy known as "ferroaluminum" or as the pure metal, either in the granulated or bar form or in small pieces weighting uniformly one-eighth ounce or one-fourth ounce each.

Used in Thermit Welding.

This property of keeping molten metal hot or of raising the temperature of a molten metallic bath has been utilized in the thermit welding process, invented by Goldschmidt. In this process aluminum and iron oxide are intimately mixed in a finely divided state and ignited by means of a fuse. The heat of combustion in the ensuing reaction raises the temperature of the casting to the welding point. The reaction takes place in a funnel-shaped crucible, from which the fluid metal resulting from the reaction is run into a suitably shaped mold formed around the area of the joint to be made, which is preheated by means of a blow lamp to avoid chilling the first lot of metal coming through.

Aluminum is used in constantly increasing quantities in the motor-car industry, combining as it does both lightness and stiffness. It is used in making crank cases, gear boxes, carbureters, radiators, dashboards, &c., besides in smaller ways. In castings it has been found advantageous to alloy the metal with copper, zinc, or nickel, which increases its strength and makes it easier to work.

The Geological Survey has issued for the use of colleges and schools a profusely illustrated book giving thorough instruction in the interpretation of topographic maps.

CROPS BEFORE LEGISLATION.

Alabama Governor Hesitates to Call Legislature in Extra Session.

Montgomery, Ala., July 3.—The peculiar condition of crops, interfering with a special session of the Alabama legislature seems the present solution of the question of the time for the convening of that body. Gov. Comer has intimated that there will be a special session, and a special election has been held to fill the legislative vacancies that existed. But the call for the legislature was extended before the recent continued rains came, and the announcement of the session was made before the crops had been injured.

In an interview, Gov. Comer said:

"Do you notice the condition of the grass about you? I tell you the farmers are in a bad way. Everything is swamped, and the agricultural industries have already been delayed several weeks."

Many of the legislators are practical farmers, while the majority of the rest are closely identified with the agricultural interests of the Commonwealth.

WILL ENLARGE COTTON MILL

Action of Columbus, Ga., Company Attracts Much Attention.

South Alabama Takes Up Cultivation of Sumatra Tobacco with Great Energy.

Columbus, Ga., July 3.—The Georgia and Alabama Industrial Index says in its regular weekly issue:

"Conspicuous among the industrial and news items of the past week was the action of the stockholders of a Columbus, Ga., cotton manufacturing company in formally voting to enlarge their plant at a cost of nearly $500,000. This cotton mill has been in operation only eight years, and the fact that its earnings and its prospects for continued increase of sales are such that its owners have decided to double its capacity, illustrates strikingly the profits in cotton manufacturing in the South when properly conducted.

"The addition to the plant will be slightly larger than the original building, and the enlarged structure will be an imposing mill four stories high, 534 feet long and 128 feet wide. The enlargement will give employment to 400 or 500 more operatives.

"The energetic manner in which South Alabama is taking hold of the culture of Sumatra tobacco is illustrated by the announcement of a big tobacco-curing and manufacturing plant in Baldwin County. A large, three-story building will be erected by the company, which will encourage the culture of tobacco in that section, inviting the co-operation of the farmers.

"The contract for the erection of the first paper mill in the country in which the material used will be the stalks of the cotton plant was awarded at Cordele, Ga., and within a short time the work of erecting a large plant there will be in progress.

"It is estimated that one-half million dollars will be expended in Birmingham, Ala., this year in the erection and enlarging of churches. Among the church construction items for the week is the award of an important contract at Columbus, Ga.

Probably the biggest auction sale of lots in the history of Atlanta, Ga., took place during the week, $171,003 being the sum realized from one day's sales. At Birmingham, Ala., a $75,000 land deal was consummated, and Savannah, Ga., reports an $80,000 transaction in realty.

"A $1,000,000 investment in new shops and shop enlargements is said to have been decided upon for the Central of Georgia Railway, which has just passed under the control of the Illinois Central Railway. Substantial improvements will be made by the new owners of the property, it is understood.

"A number of important school building contracts were let during the week, the most notable being at Montgomery, Ala., where contract was awarded for the erection of a high school building that will cost over $100,000.

"Hampton, Ga., and Allapaha, Ga., voted improvement bonds, and Dothan, Ala., and Attalla, Ala., sold bonds recently voted. New banks are projected for Marion, Ala., Milledgeville, Ga., and Oak Park, Ga. Sixteen new corporations were formed during the week with minimum capital stock of $465,000. Butts County, Ga., is agitating the issuance of $100,000 of road-improvement bonds. Quitman, Ga., business men are raising money to build a railroad to Monticello, Fla."

Texas Will Have Huckleberry.

San Antonio, Tex., July 3.—Every farmer in the San Antonio County will have his "huckleberry," a number of them, in fact, when experiments made by William Campbell, of this city, becomes widely known. A few months ago he obtained a supply of the young huckleberry plants from the United States Department of Agriculture. He put them on his farm, and they have grown so luxuriantly that his whole place is going to huckleberries. This plant, which is known in the North as blueberry, grows wild and is much esteemed for pie. Mr. Campbell is of the opinion that the huckleberry will spread all over Southwest Texas, and the zone of pie will thereby be generally extended.

CITY FOR TOURISTS

Gainesville Invites Them in the Winter Season.

BUILDING OPERATIONS ACTIVE

Citizens Donate $70,000 in Buildings and 565 Acres as Site for State University—Town Shaded by Big Oaks, Takes on Improvements and Progresses Grandly—New Buildings

Gainesville, Fla., July 3.—Though one of the prettiest and most attractive little cities in the United States, with water almost identical in analysis with the famous Poland water of Maine, Gainesville was almost unheard of several years ago. Latterly plucky citizens, after winning the State University at a cost of $70,000 for buildings and an additional donation of 565 acres of land for a site, have inaugurated extensive public and private improvements, and are bidding for tourists, who will find here all the comforts that money can buy—a mild winter climate, refined society, superior educational advantages, and beautiful drives through fine forests of hardwood and pine.

Sportsmen will be attracted by the quail, snipe, and duck shooting, and bass fishing in the fresh-water lakes.

Public Improvements Many.

Public and private improvements made during the year and contemplated in the immediate future may be summed up as follows: Completion of city sewerage plant, $50,000; seven miles of granolithic sidewalks and curb and gutter, $54,000; one mile macadam street, $10,000; other street improvements, $5,000; two miles extension water mains, $1,600; White House Hotel, remodeling and enlarging, $14,000; Brown House Hotel, remodeling and enlarging, $5,000; Dutton Bank, remodeling interior, $17,000; Gainesville National Bank, remodeling interior, $25,000; Hyde Building, remodeling, $6,000; Baird's Opera House, remodeling, $13,000; Electric Light Company extensions, five miles, $3,000, and extension gas mains, one mile, $1,500.

New buildings are as follows: Hill block, two-story brick, $22,500; Masonic lodge, $18,000; Graham block, two-story brick, $22,500; two brick wholesale grocery houses, $14,000; warehouse, F. D. Warner & Co., $2,000; warehouse, Diamond Ice Company, $1,500; Weaver's steam laundry, one-story brick, $1,500; fourteen dwelling houses of the higher class, $50,000, and 150 houses of the cheaper class, $60,000.

Buildings Under Way.

Buildings and other improvements under way and in contemplation are: Ground broken for United States government building, to cost $150,000, in which will be located the United States land office, post-office, and Federal courts; university buildings, appropriation now available, $80,000; Baird brick block, $6,000; brick auto garage, $1,500; Pickett brick block (estimated), $10,000; passenger station S. A. L. Railway, $4,000; remodeling A. C. L. Railway station, $3,000; First Baptist Church, remodeling, $5,000; Methodist Church, remodeling, $2,000, and Kraft Pulp and Paper Mill, $2,500,000.

Gainesville is a clean, moral, healthful, progressive city, and is shaded by gigantic oaks. Some of her streets are unsurpassed in their beauty. The intention of the citizens is to make it the best residence town in Florida.

B. F. HAMPTON,
Secretary Board of Trade.

SOUTH OF TO-DAY AND THE FUTURE

Continued from Page One.

and Florida are now the only States south of Virginia and Kentucky and east of the Mississippi which have not joined the prohibition ranks.

Years ago, Horace Greeley's famous words, "Young man, go West," became a slogan cry. To-day, if the truth were known, that slogan would read, "Young man, stay South." Because the progress and the vast possibilities of the South are as yet little realized, thousands leave the farm each year for the city, and thousands in their turn flock from the cities of the South, so rich in opportunity, to the crowded centers of the North.

Turning Back to Farm.

There, where competition is fiercest, and economic pressure tensest, hundreds go down in the fight who might have won success from the prodigal resources of their land. A few who have pressed on from the farm to the Southern city, and thence to the Northern, are now turning back to the farm as to the source of greatest profit.

The South is truly an area of magnificent distances. Florida has a longer sea coast than that of all the Atlantic States combined, and the State of Georgia alone is more than twice as large as Massachusetts, Connecticut, Rhode Island, Vermont and New Hampshire put together. "If we should cut from a map of the country the State of Texas, and put the center of it on Nashville," an exponent of Southern resources has written, "the Northern end would reach to Chicago, the southern Mobile, the eastern wing would stretch to Raleigh, and the western to Little Rock. That State is twice as large as Japan, which supports a population of 50,000,000."

When we remember that the population of this great State is only little over 3,000,000, and that only a fraction of its area is under cultivation, we gain some proportionate idea of the industrial and comercial future which awaits the South.

S. A. ARMSTRONG.

Will Be Operated by Receivers.

Anniston Ala., July 3.—Capt. J. M. Barr, president, and one of the receivers of the Woodstock Iron Works Company, which is operating two large furnaces in Anniston, has returned to the city, and announces that the action of Birmingham creditors in placing the plant in the hands of receivers will have no effect upon the future policy of the concern. J. B. Carrington, vice president and general manager, will continue as manager for the receivers, and it is said the plant will resume operations about July 5, the work of relining the larger furnace having continued without interruption.

Although the average annual damage by floods in the United States has never been accurately determined, a recent government estimate placed the figures at $100,000,000.